REMARKS

Claims 1 and 12-19 are pending. Claims 1, 12-14, and 18 have been amended. Support for the amended claims can be found throughout the specification and in the claims as originally filed, for example, on page 36, lines 8-9, page 40, lines 12-14, and page 44, lines 8-15. No new matter enters by way of these amendments.

I. Information Disclosure Statement

Applicants acknowledge and thank the Examiner for providing a copy of the page of the IDS submitted on October 15, 2001 and considered December 14, 2002 with the "examiner's initials indicating consideration of U.S. Patent No. 5,770,718 (Moffatt)." Office Action at page 2.

II. Claim Objections

Applicants acknowledge the Examiner' indication that "[c]laims 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form." Office Action at page 9.

III. Rejections under 35 U.S.C. § 101

Applicants acknowledge and thank the Examiner for indicating that "one of ordinary skill in the art would not have doubted that SEQ ID NO: 5 encoded part of a maize adenine phosphoribosyl transferase," and as such "the utility rejection under 35

USC 101 set forth in the prior Office action will be withdrawn." Office Action at page 6.[1]

IV. Rejection under 35 U.S.C. § 112, first paragraph, Written Description

Claims 1 and 18-19 stand rejected under 35 U.S.C. § 112, first paragraph because the claimed subject matter allegedly was "not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention." Office Action at page 6. Applicants respectfully traverse this rejection.

The Examiner asserts that "[c]laim 1 is directed to a sequence that encodes a maize adenine phosphoribosyl transferase or a soybean adenine phosphoribosyl transferase [and] as written, the claim requires a sequence that encodes the entire enzyme." *Id.* The Examiner argues however, that "the specification does not disclose a complete soybean sequence...[or] maize sequence that contains SEQ ID NO: 5." *Id* at pages 6-7. Moreover, the Examiner alleges that claims 18-19 are not adequately described apparently because the claims are directed to nucleic acid molecules that are "not required to contain SEQ ID NO: 5 but rather to hybridize to a second nucleic acid molecule which in some embodiments is SEQ ID NO: 5 or complement thereof." *Id.* at page 7. Applicants respectfully disagree.

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[1] Applicants note that the heading of this section of the Office Action recites "*Claim Rejections - 35 USC § 112*," however, the discussion in this section of the Office Action is directed toward the utility of the claimed nucleic acid molecules under 35 U.S.C. § 101, and does not appear to present rejections under 35 U.S.C. § 112. As such, Applicants have treated the title of the section as a typographical error.

An adequate written description of a genus of nucleic acids, as recited in claims 1 and 18-19 may be achieved by either "a recitation of a representative number of [nucleic acid molecules], defined by nucleotide sequence, falling within the scope of the genus or of a recitation of structural features common to the members of the genus." *Regents of the University of California v. Eli Lilly and Co.*, 119 F.3d 1559, 1568-69 (Fed. Cir. 1997). The feature relied upon to describe the claimed genus must be capable of distinguishing members of the claimed genus from non-members. *Id.*

As previously set forth, the purpose of the written description requirement is to ensure that the inventors had possession of the claimed subject matter, *i.e.*, to ensure that the inventors actually invented what is claimed. *Gentry Gallery Inc. v. Berkline Corp.*, 134 F.3d 1473, 1479, 45 U.S.P.Q.2d 1498, 1503 (Fed. Cir. 1998); *Lockwood v. American Airlines*, 107 F.3d 1565, 1572, 41 U.S.P.Q.2d 1961, 1966 (Fed. Cir. 1997); *In re Alton*, 76 F.3d 1168, 1172, 37 U.S.P.Q.2d 1578, 1581 (Fed. Cir. 1996). In accordance with this purpose, Applicants need not "describe," in the sense of Section 112, all things that are encompassed by the claims. To contend otherwise would contradict established jurisprudence, which teaches that a patent may be infringed by technology developed after a patent issues. *United States Steel Corp. v. Phillips Petroleum Co.*, 865 F.2d 1247, 1251, 9 U.S.P.Q.2d 1461, 1464 (Fed. Cir. 1989). A related, and equally well-established principle of patent law is that claims "may be broader than the specific embodiment disclosed in a specification." *Ralston Purina Co. v. Far-mor-Co*, 772 F.2d 1570, 1575, 227 U.S.P.Q. 177, 179 (Fed. Cir. 1985), *quoting In re Rasmussen*, 650 F.2d 1212, 1215, 211 U.S.P.Q. 323, 326 (C.C.P.A. 1981). Thus, in order for Applicants to describe each and every molecule encompassed by the claims, it is not required that every aspect of those nucleic acid molecules (*e.g.*, a sequence that encodes the entire enzyme) be disclosed. *In re Alton,* 76 F.3d 1168, 1175 (Fed. Cir. 1996) (if a person of ordinary skill

in the art would have understood the inventor to have been in possession of the claimed invention at the time of filing even if every nuance of the claims is not explicitly described in the specification).

It is well-settled law that each nucleic acid molecule within a claimed genus does not need to be described by its complete structure. The Federal Circuit has elucidated a test for written description wherein a genus of nucleic acids may be described by a structural feature that distinguishes members of the claimed genus from non-members of the claimed genus. *Regents of the University of California v. Eli Lilly and Co.*, 119 F.3d 1559, 1568-69, 43 U.S.P.Q.2d 1398, 1406 (Fed. Cir. 1997). In contrast to the mere name "cDNA" provided in *Eli Lilly*, Applicants have provided a detailed chemical structure by way of the claimed SEQ ID NO: 5. Applicants have therefore satisfied the *Eli Lilly* test for written description.

Applicants have provided a detailed chemical structure, *i.e.*, the nucleic acid sequence of SEQ ID NO: 5. Moreover, as the Examiner has acknowledged, "one of ordinary skill in the art would not have doubted that SEQ ID NO: 5 encoded part of a maize adenine phosphoribosyl transferase." Office Action at page 6. Nucleic acid molecules falling within the scope of claims 1 or 18-19 are readily identifiable – they comprise the nucleic acid molecule having or specifically hybridizing to the nucleic acid sequence of SEQ ID NO: 5 or complement thereof. The fact that the nucleic acid molecules may comprise additional sequences or variations is beside the point. Such modifications are readily envisioned by one of ordinary skill in the art and disclosed through the present specification. Thus, there is no deficiency in the written description support for the claimed invention. Therefore, claims 1 and 18-19 satisfy the written description requirement of 35 U.S.C. § 112, first paragraph. Reconsideration and withdrawal of this rejection are respectfully requested.

V. Rejections under 35 U.S.C. § 102

Claim 12 stands rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Moffat *et al.* (Plant Molecular Biology, v 18, pp 653-662, 1992). Office Action at page 8. According to the Examiner, "Moffat et al. is applied as in the prior Office Action." *Id.* The Examiner argues that the claim 12 "is construed to include a subsequence of SEQ ID NO: 5 with no limitation as to the length." *Id.* The Examiner further argues that the reference "teaches a sequence that comprises a subsequence meeting these limitations as set forth in the prior Office action." *Id.* Applicants respectfully disagree.

As previously set forth, "it is axiomatic that for prior art to anticipate under § 102 it has to meet every element of the claimed invention." *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 231 U.S.P.Q. 81 (Fed. Cir. 1986). Further, "an anticipation rejection requires a showing that each limitation of a claim must be found in a single reference, practice, or device." *In re Donohue*, 766 F.2d 531, 226 U.S.P.Q. 619 (Fed. Cir. 1985). The Examiner maintains an untenable interpretation of the claims to cover small fragments of the claimed sequence. Although Applicants disagree with the rejection, to facilitate prosecution, claim 12 has been amended to recite "a substantially purified nucleic acid molecule comprising the nucleic acid sequence of SEQ ID NO: 5 or complement thereof." Whatever Moffat, *et al.* teaches, it does not disclose SEQ ID NO: 5 in its entirety. Absent a teaching of each and every element of the claim, *e.g.*, SEQ ID NO: 5, the reference cited by the Examiner does not anticipate claim 12 and the rejection should be withdrawn.

Claims 12-14 stand similarly rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by the Sigma Catalog (1990), as applied in the prior Office Action.[2] Office Action at page 9. The Examiner argues that claims 12-14 are "construed to include a subsequence of SEQ ID NO: 5 with no limitation as to the length" and that the reference "teaches sequences that consist of a subsequence meeting these limitations as set forth in the prior Office action." *Id.* Applicants respectfully disagree.

As argued above, the Examiner has applied an untenable interpretation of the claims to cover small fragments of the claimed sequence. Although Applicants disagree, to facilitate prosecution, claims 12-14 have been amended to recite that the claimed nucleic acid molecule comprises, consists or has sequence identity with "a nucleic acid sequence [or molecule] having the full-length sequence of SEQ ID NO: 5 or complement thereof." Whatever the Sigma Catalog (1990) teaches, it does not disclose SEQ ID NO: 5 in its entirety. Nor does it disclose a nucleic acid molecule having between 90% and 100% identity with a nucleic acid molecule having the full-length sequence of SEQ ID NO: 5 or complete complement thereof. Absent a teaching of each and every element of the claim, *e.g.*, the full-length sequence of SEQ ID NO: 5, the Sigma Catalog cited by the Examiner does not anticipate claims 12-14 and the rejection should be withdrawn. Applicants request reconsideration and withdrawal of the rejections of claims 12-14 under 35 U.S.C. § 102(b).

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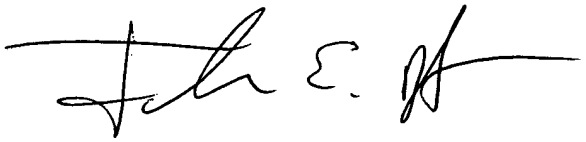
[2] Sigma product numbers 0 4628 ($d(pA)_6$) and 0 4378 ($d(pA)_4$) were applied in the previous Office Action.

Conclusion

In view of the foregoing remarks, Applicants respectfully submit that the present application is now in condition for allowance, and notice of such is respectfully requested. The Examiner is encouraged to contact the undersigned should any additional information be necessary for allowance.

Respectfully submitted,



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